

Developer Documentation

(Aug 27)

Theory of operation

The temperature monitoring program is written in python and is a script. The current script has about 5 steps

1. Read configuration data from XML files
2. Read temperature data from small servers located in computer rooms
3. Store the current values in a file
4. Create maps, graphs, and tables of the data
5. Send e-mails if there is a problem

Essentially the program acts as a central hub so temperature information can be gathered from disparate locations, formatted, and then saved to an easily accessible location.

Directory Structure

There are two "root" directories on the production machine (cdops.fnal.gov).

1. Local web directory D:\inetpub\wwwroot\ (share is \\cdops\cdops-web-dav\)(documents located here are accessible from a web browser)
2. Program directory D:\temp-monitor (share is \\cdops\temp-monitor\)(this folder and its subfolders, contain the python program and associated resources)

The web directory has the following hierarchy:

building_name\room_name\
 image\ (contains resources for pages built by HTMLgen)
 graphs\ (contains the graphs of each sensor)
 sensordata\ (contains the text data files for the sensors)
 csv\ (contains the generated reports)
 index.html
 map.html
 table.html
 graphsIndex.html
 map.jpg

The program directory contains three relevant files (libparser.py, libbasic.py, and libtemp.py) the HTMLgen module, and room folders with associated data (GCC-CRA, GCC-NRA, ...) any other files can be ignored.

Development

Before development can begin on a machine python must be installed. The newest version CANNOT be used. Anything above 2.4.X does not contain the required libraries for the HTMLgen module. Additionally a third party image processing library must be installed.

It can be found at <http://www.pythonware.com/products/pil/>

Sensor Naming Conventions

A rather large amount of information about a sensor is stored in its name. Specifically, every sensor contains 5 pieces of data.

1. Offset from an origin point in tenths of an foot(X,Y)
2. Hot or Cold side
3. Row Letter
4. Rack Number
5. Top, or Middle of rack

The data are arranged in the following format (expressed as a regular expression)

`\d\d\d\d\d\d\d:[H|C]-[A-Z]\d\d?-[T|M]`